

ABSTRACT

A method and system of imagewise etching the surface of a substrate, such as thin glass, in a parallel process. The substrate surface is placed in contact with an etchant solution which increases in etch rate with temperature. A local thermal gradient is then generated in each of a plurality of selected local regions of a boundary layer of the etchant solution to imagewise etch the substrate surface in a parallel process. In one embodiment, the local thermal gradient is a local heating gradient produced at selected addresses chosen from an indexed array of addresses. The activation of each of the selected addresses is independently controlled by a computer processor so as to imagewise etch the substrate surface at region-specific etch rates. Moreover, etching progress is preferably concurrently monitored in real time over the entire surface area by an interferometer so as to deterministically control the computer processor to image-wise figure the substrate surface where needed.